

WHAT IS CLAIMED IS:

1. An apparatus for and maintaining a wrist in a healing position comprising:
 - a first clamp assembly operable to removably mount
5 to an external fixator;
 - the first clamp assembly operable to couple to a connector rod;
 - a second clamp assembly operable to releasably couple to at least one bone pin embedded in a bone; and
10 the connector rod operable to join the first clamp assembly to the second clamp assembly.
2. The apparatus of Claim 1 further comprising the external fixator attached to a human's radius and the
15 second clamp assembly coupled to a bone pin embedded in a human's ulna.
3. The apparatus of Claim 1 further comprising the external fixator attached to a human's radius and the
20 second clamp assembly coupled to a bone pin embedded in at least one metacarpal bone of a human.
4. The apparatus of Claim 1 further comprising the apparatus formed of at least one of a group consisting of
25 stainless steel, titanium, plastic and radiolucent material.

5. The apparatus of Claim 1 further comprising the first clamp assembly and the second clamp assembly operable to maintain a human's radius and ulna bones in a neutral position.

5

6. The apparatus of Claim 1 further comprising the first clamp assembly and the second clamp assembly operable to maintain a human's radius and ulna bones in a supinated position.

10

7. The apparatus of Claim 1 further comprising the first clamp assembly, second clamp assembly and the connector rod operable to limit mobility of a human's radius and ulna bones by positioning the radius and ulna bones.

15

8. The apparatus of Claim 1 further comprising the first clamp assembly and the second clamp assembly operable to allow supination and pronation of the radius and ulna bones to be limited by intraoperative manipulation of the apparatus.

20

9. The apparatus of Claim 1 wherein the first clamp assembly comprises an assembly clamp operable to attach to a longitudinal member of an external fixator and a clamp assembly head operable to secure the assembly clamp and a connector rod fastener.

25

10. The apparatus of Claim 1 wherein the second clamp assembly comprises:

a fastener operable to releasably engage at least one bone pin embedded in a bone of a human's arm; and

5 the fastener operable to releasably hold the connector rod and a clamp assembly head.

11. The apparatus of Claim 1 wherein the second clamp assembly comprises:

10 a fastener operable to releasably engage at least one bone pin embedded in a bone of a human's hand; and

the fastener operable to releasably hold the connector rod and a clamp assembly head.

15 12. The apparatus of Claim 1 wherein the apparatus is positioned to reduce bony fragments and maintain the bony fragments in position.

13. An apparatus for maintaining a healing position of one or more bones of a human's arm comprising:

a first clamp assembly operable to removably mount to an external fixator coupled to a radius of a human;

5 the first clamp assembly further operable to couple to a connector rod;

a second clamp assembly operable to releasably couple to at least one bone pin embedded in a bone of a human; and

10 a connector rod operable to releasably join the first clamp assembly to the second clamp assembly.

14. The apparatus of Claim 13 wherein the first clamp assembly comprises a U-shaped bracket operable to
15 attach to a rod-shaped component of an external fixator and the first clamp assembly further comprising a fastener operable to couple to the connector rod.

15. The apparatus of Claim 13 wherein the second
20 clamp assembly comprises a rotatable fastener configured to couple the second clamp assembly to the connector rod and the second clamp assembly further comprising a releasable clamp operable to engage a bone pin or screw embedded in a human's bone.

16. The apparatus of Claim 13 wherein the first
clamp assembly comprises a clamp operable to attach to a
longitudinal member of an external fixator and a clamp
assembly head operable to secure the assembly clamp and a
5 connector rod fastener.

17. The apparatus of Claim 13 wherein the second
clamp assembly comprises a releasable fastener operable
to engage at least one bone pin or screw embedded in a
10 bone of a human's arm and a fastener operable to hold the
connector rod and a clamp assembly head.

18. The apparatus of Claim 13 further comprising
the at least one bone pin embedded in a bone selected
15 from a group consisting of the radius, ulna and at least
one metacarpal bone.

19. An apparatus for maintaining a healing position of one or more bones of a human's wrist wherein at least one bone of the human's wrist is injured comprising:

5 a first clamp assembly operable to removably mount to an external fixator when the external fixator is coupled to a bone of a human;

the first clamp assembly further operable to couple to a connector rod;

10 a second clamp assembly operable to releasably couple to at least one bone pin embedded in a bone of a human; and

a connector rod operable to join the first clamp assembly to the second clamp assembly.

15 20. The apparatus of Claim 19 wherein the first clamp assembly comprises:

a bracket operable to attach to a longitudinal member of an external fixator; and

20 a clamp assembly head operable to secure the assembly clamp and a connector rod fastener with the bracket.

21. The apparatus of Claim 19 wherein the second clamp assembly comprises:

25 a releasable fastener operable to engage at least one bone pin or screw embedded in a bone of a human's wrist; and

a fastener operable to hold the connector rod and a clamp assembly head.

22. The apparatus of Claim 19 further comprising the external fixator attached to a radius bone of a human.

5 23. The apparatus of Claim 19 further comprising the external fixator is attached to at least one metacarpal bone of a human.

24. The apparatus of Claim 19 wherein the connector
10 rod comprises a single longitudinal member.

25. The apparatus of Claim 19 wherein the connector rod comprises a first end with at least one prong operable to slidably attach to the first assembly clamp
15 and a second end having a body operable to engage the second assembly clamp.

26. The second assembly clamp of Claim 19 further comprising:
20 a circular head having a central opening; and
 the central opening operable to engage the connector rod.

27. The apparatus of Claim 19 wherein the apparatus
25 is positioned to reduce bony fragments.

28. The apparatus of Claim 19 wherein the apparatus is positioned to maintain position of injured soft tissue.

29. An apparatus for reducing bony fragments and maintaining a healing position for at least one bone or soft tissue of a human's wrist or hand comprising:

a first clamp assembly operable to removably mount
5 to an external fixator wherein the external fixator is coupled to a radius of a human, the first clamp assembly further operable to couple to a connector rod and the first clamp assembly comprising an assembly clamp operable to attach to a longitudinal member of an
10 external fixator, a clamp assembly head operable to secure the assembly clamp and a connector rod fastener;

a second clamp assembly operable to releasably couple to a bone pin, screw or a plurality thereof embedded in the bone of a human, the second clamp
15 assembly comprising a releasable fastener operable to engage at least one bone pin embedded in a bone of a human, a fastener operable to hold the connector rod and a clamp assembly head; and

a connector rod operable to releasably join the
20 first clamp assembly to the second clamp assembly.

30. An apparatus for maintaining a healing position of one or more bones of a human's wrist wherein at least one bone of the human's wrist requires fixation comprising:

5 a first clamp assembly operable to removably mount to an external fixator wherein the external fixator is coupled to a radius of a human, the first clamp assembly further operable to couple to a connector rod and the first clamp assembly comprising a U-shaped clamp operable
10 to releasably attach to a longitudinal member of an external fixator, a clamp assembly head operable to secure the assembly clamp and a connector rod fastener operable to releasably attach to a connector rod;

 a second clamp assembly operable to releasably
15 couple to at least one bone pin embedded in the bone of a human, the second clamp assembly comprising a releasable fastener operable to engage at least one bone pin embedded in a bone of a human, a releasable rotatable fastener operable to hold the connector rod in position
20 and a clamp assembly head operable to secure the assembly clamp; and

 the connector rod operable to releasably join the first clamp assembly to the second clamp assembly.

31. A method of maintaining a human's wrist or hand in a healing position comprising:

attaching an external fixator to the radius bone of a wrist;

5 releasably attaching a first clamp assembly to the external fixator;

releasably attaching a second clamp assembly to at least one bone pin embedded in a bone of a human; and

10 joining the first clamp assembly to the second clamp assembly with a connector rod.

32. The method of Claim 31 further comprising limiting the degree of supination and pronation of a human's radius and ulna bones by positioning the first
15 clamp assembly, second clamp assembly and connector rod relative to the human's radius and ulna bones.

33. The method of Claim 31 further comprising reducing bony fragments of an extremity.

34. A method of maintaining a human's wrist or hand in a healing position comprising:

limiting the degree of supination and pronation of
5 the human's radius and ulna bones as required for healing
of an injury to the human's wrist or hand.

35. The method of Claim 34 further comprising
attaching an external fixator to the radius bone of the
10 wrist;

releasably attaching a first clamp assembly to the
external fixator;

releasably attaching a second clamp assembly to at
least one bone pin embedded in a bone of a human;

15 joining the first clamp assembly to the second clamp
assembly with a connector rod;

positioning the first clamp assembly, the second
clamp assembly and the connector rod relative to the
radius bone and the ulna bone to maintain the desired
20 healing position.

36. A method of reducing bony fragments in a human's wrist or hand comprising:

attaching an external fixator to the radius bone of
5 a wrist;

releasably attaching a first clamp assembly to the external fixator;

releasably attaching a second clamp assembly to at least one bone pin embedded in a bone of a human; and

10 joining the first clamp assembly to the second clamp assembly with a connector rod.